

WHAT IS CLAIMED IS:

1. An air conditioner for a vehicle having a regenerative electric-power generating unit for regenerating kinetic energy accumulated in the vehicle as electric energy by operating a driving source, the air conditioner comprising:

an air conditioning unit for performing air-conditioning operation of a passenger compartment of the vehicle, the air conditioning unit having an electric part that is operated by electrical power;

a regeneration determining means for determining whether the regenerative electric-power generating unit is in an electric-power generating state; and

a control means for controlling an allowed maximum electric-power value to be consumed in the electric part, wherein,

when the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state, the control means controls the allowed maximum electric-power value to be greater than that set when no the regenerative electric-power generating unit is in the electric-power generating state.

2. The air conditioner according to claim 1, further comprising

increase determining means for determining whether the electric power actually consumed in the electric part is increased when the regeneration determination means determines

that the regenerative electric-power generating unit is in the electric-power generating state.

3. The air conditioner according to claim 1, further comprising

an electric supply means for directly supplying electric power generated in the regenerative electric-power generating unit to the electric part without through a battery, at least when the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

4. The air conditioner according to claim 1, further comprising

an electric supply means for supplying electric power generated in the regenerative electric-power generating unit to the electric part through a battery mounted on the vehicle;

a battery charging detecting unit for detecting a remaining charging amount of the battery; and

increase determining means for determining whether the electric power actually consumed in the electric part is increased, when the remaining charging amount detected by the battery charging detecting unit is larger than a predetermined amount, in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

5. The air conditioner according to claim 2, wherein the air conditioning unit has various kinds of the electric parts, the air conditioner further comprising

electric power increasing means for increasing the electric power actually consumed in the electric parts, wherein after the electric power increasing means increases the electric power actually consumed in one of the electric parts, the electric power increasing means increases the electric power actually consumed in an another one of the electric parts.

6. The air conditioner according to claim 1, wherein:

the air conditioning unit includes a blower for blowing air into the passenger compartment; and

the control means increases the allowed maximum electric-power value of the electric part, when an air blowing amount of the blower is more than a predetermined amount in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

7. The air conditioner according to claim 1, further comprising

an outside temperature sensor for detecting an outside air temperature outside the passenger compartment, wherein,

the control means increases the allowed maximum electric-power value of the electric part, when the outside air

temperature detected by the outside temperature sensor is lower than a predetermined temperature in a heating operation for heating the passenger compartment, in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

8. The air conditioner according to claim 1, wherein:

the air conditioning unit includes a heater core for heating air to be blown into the passenger compartment by using waste heat from the vehicle as a heating source; and

the control means increases the allowed maximum electric-power value of the electric part, when a temperature of the waste heat is lower than a predetermined temperature in a heating operation for heating the passenger compartment, in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

9. The air conditioner according to claim 1, further comprising

an outside temperature sensor for detecting an outside air temperature outside the passenger compartment, wherein,

the control means increases the allowed maximum electric-power value of the electric part, when the outside air temperature detected by the outside temperature sensor is higher than a predetermined temperature in a cooling operation

for cooling the passenger compartment, in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

10. The air conditioner according to claim 1, further comprising

a solar radiation detection sensor for detecting a solar radiation amount entering the passenger compartment, wherein,

the control means increases the allowed maximum electric-power value of the electric part, when the solar radiation amount detected by the solar radiation detection sensor is larger than a predetermined amount in a cooling operation for cooling the passenger compartment, in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

11. The air conditioner according to claim 1, wherein the vehicle is a hybrid vehicle having an engine and an electric motor as the driving source.

12. An electric device for a vehicle having a regenerative electric-power generating unit for regenerating kinetic energy accumulated in the vehicle as electric energy by operating a driving source, the electric device comprising:

an electric part that is operated by electrical power;

a regeneration determining means for determining whether the regenerative electric-power generating unit is in an electric-power generating state; and

a control means for controlling an allowed maximum electric-power value to be consumed in the electric part, wherein,

when the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state, the control means controls the allowed maximum electric-power value to be greater than that set when no the regenerative electric-power generating unit is in the electric-power generating state.

13. The electric device according to claim 12, further comprising

increase determining means for determining whether the electric power actually consumed in the electric part is increased when the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

14. The electric device according to claim 12, further comprising

an electric supply means for directly supplying electric power generated in the regenerative electric-power generating unit to the electric part without through a battery, at least when the regeneration determination means determines that the

regenerative electric-power generating unit is in the electric-power generating state.

15. The electric device according to claim 12, further comprising

an electric supply means for supplying electric power generated in the regenerative electric-power generating unit to the electric part through a battery mounted on the vehicle;

a battery charging detecting unit for detecting a remaining charging amount of the battery; and

increase determining means for determining whether the electric power actually consumed in the electric part is increased, when the remaining charging amount detected by the battery charging detecting unit is larger than a predetermined amount, in a case where the regeneration determination means determines that the regenerative electric-power generating unit is in the electric-power generating state.

16. The electric device according to claim 13, wherein the air conditioning unit has a various kinds of the electric parts, the air conditioner further comprising

electric power increasing means for increasing the electric power actually consumed in the electric parts, wherein after the electric power increasing means increases the electric power actually consumed in one of the electric parts, the electric power increasing means increases the electric power actually consumed in an another one of the

electric parts.

17. The electric device according to claim 12, wherein the vehicle is a hybrid vehicle having an engine and an electric motor as the driving source.